Original Article

# Perception of primary health care providers of plastic surgery and its influence on referral

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## Abstract

**Objectives:** The aim of this study is to understand the level of knowledge and awareness of plastic surgery among primary health care (PHC) providers in Qassim region, Kingdom of Saudi Arabia. **Methods:** This is a cross-sectional study conducted from February 2018 to March 2018 among health care providers in PHC in Qassim region, Saudi Arabia. Overall, 82 health care providers were recruited using simple random sampling. Filling the questionnaire was considered as approval to join the study. The study included general practitioners and family medicine specialists. Other specialties working in PHC were excluded from the study. **Results:** In total, 82 physicians were enrolled in this study. Physicians considered that out of 28 listed disorders 16 of them have chosen a plastic surgeon as the best surgeon to perform the necessary surgery. The selection of plastic surgeon as the best doctor for a specific disorder was as follows: Burn deformities (93%), liposuction (87.7%), breast reduction/enhancement (86.8%), skin grating (84.4%), surgery for facial wrinkles (79.2%), electrical burns (71.6%), Botox (64.4%), cuts over the face (63.5%), abdominoplasty (62.9%), burns (59.4%), congenital anomalies of ear and nose (51.5%), deformities of leprosy (51.4%), sex change surgery (49.2%), non-healing wound over legs (47.1%), cleft lip and palate (41.7%), and totally, amputee thumb, finger, or hand (36.1%). The selection of other disorders was distributed almost similarly. **Conclusion:** General practitioners need more orientation for plastic surgery discipline. In this study, the majority of the study physicians do not have enough knowledge about the meaning of plastic surgery. As a PHC physician, knowledge about this topic is very essential because the patient is very likely to ask about the best surgeon for referral and the potential positive and negative effect of the reconstructive procedure.

**Keywords:** Awareness, family physicians, general practitioner, knowledge, plastic surgery

## Introduction

Plastic surgery is viewed as one of the oldest surgical discipline. As stated by the Hindu context, this procedure had been utilized since 2000 years ago. History shows the utilization of reconstructive surgery to reform noses, lips, and ears. Because of the previous conflicts and wars, there was a noteworthy progression in utilizing reconstructive surgery. This has been re-invented and re-innovated as the time passes.[1]

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**Access this article online**

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_204_18

Many people mislead plastic surgeon to cosmetic surgeon, which may guide to misconception in between medical practitioners and the general public. Medical students gained enough fundamentals on this subject during their education at school. Hence, this may influence their capability of knowing the appropriate circumstance to direct patients to plastic surgeons.[2]

Plastic surgeons who directly performed surgery on physical abnormalities such as congenital defects, post-traumatic deformities and skin infections, and benign and malignant tumor.



**How to cite this article:** Alharbi AA, Al-Thunayyan FS, Alsuhaibani KA, Alharbi KA, Alharbi MA, Arkoubi AY. Perception of primary health care providers of plastic surgery and its influence on referral. J Family Med Prim Care 2019;8:225-30.

Family physicians are the person who furnishes the group with essential well-being administrations; so, they are considered as the guide of patients to the next level of care. Consequently, family physicians need the information of when to direct patients to the right specialty to obtain the best possible procedures and treatment.

Family physicians should be able to distinguish the differences among cosmetic, aesthetic, and medical symptoms to persuade broader approach in reconstructive treatment. Nevertheless, in a cluster of cases an obvious dissection with these implications is challenging and yet impractical. A commonly sensed of concern with respect to complicated referrals that lone portion of the patients underwent in reconstructive procedure are alluded to by the attending physician.[3]

Despite advanced progression in the field of plastic surgery, it appears that medical practitioners and the community do not have enough knowledge or accurate information about the continuum of plastic surgery. Plastic surgery had been misunderstood as a medical specialty by both medical practitioners as well as the community.[4]

Both aesthetic and reconstructive surgeries have been incorporated as the plastic surgery enhanced through wider approached and clinical ability. Burn surgery, breast reconstruction, craniofacial surgery, extremity coverage, facial trauma surgery, hand surgery, and microsurgery were included in reconstructive procedures, and body features such as neck, head, body extremities including breast were included in aesthetic procedures. Such assortment in clinical practice and capability were befuddling especially to those without knowledge in reconstructive procedure. Even some of the health care provider such as family doctors, pediatricians, and internists could not be fully comprehended the whole scope of the plastic surgery discipline. These health care providers bestowed an important knowledge to the attending families with regard to the services being offered by the cosmetic surgeons. Moreover, they also serve as an integral part in the initial information for plastic and reconstructive procedure.[5]

## Aim of the study

The aim of this study is to measure the level of knowledge and awareness of plastic surgery among primary health care (PHC) providers in a Qassim region, Kingdom of Saudi Arabia.

## Specific objectives

1. To assess general practitioners and family physicians' understanding of plastic surgery
2. To assess general practitioners and family doctors' regarding awareness for plastic surgery
3. To investigate the pattern of referral for disorders that needs surgical intervention.

# Methods

This is a cross-sectional study conducted from February 2018 to March 2018 among health care providers in PHC settings in Qassim region, Saudi Arabia. Ethical approval was obtained from the regional research ethics committee. All the health care providers were approached. Filling the questionnaire was considered as approval to join the study. At the beginning, the questionnaire had been distributed to the target participants, the data had been tabulated in an excel file, and after necessary data recoding/cleaning it was then exported to SPSS version 20 for further tabulation and subsequently for statistical data analysis. The data findings were organized into 2 sections according to the objectives of the study. First, the descriptive statistics section that summarized numbers and percentages for categorical variables and mean ± standard deviation for numerical variables. Second, the inferential statistics section presented in Table 1 in terms of univariate analysis of the association between level of knowledge toward plastic surgery versus participants' socio-demographics.

Results of score to knowledge toward plastic surgery have been calculated by adding the most appropriate answer for all questions from knowledge toward plastic surgery (Q1 – Q6) + (1 – 28) for disorders questions. Overall, 34 variables were generated; From the result the minimum score was 6, the maximum score was 34, and the mean score was 17. Level of knowledge was categorized as 0–17 as poor knowledge, while 18 – 34 as good knowledge.

## Data collection

Data collection was performed using a questionnaire, which consists of 40 questions. The questionnaires were distributed to all selected physicians in PHCs. The questionnaire consists of the following parts;

- Part I. Socio-demographic variables
- Part II. Participants' knowledge about plastic surgery
- Part III. Participants' selection of the best surgeon for the specific disorder.

## Statistical analysis method

The research team had been responsible for recording and verifying the accuracy of data. After collection and validation, data were entered and analyzed through statistical software SPSS Ver. 20. Both descriptive and analytic statistics had been conducted. The *P* value of ≤0.05 had been set as the significance level for all statistical tests. All categorical variables presented in Tables 1-3 had been summarized as numbers and percentages (%) and mean ± standard deviation for all continuous variables. In univariate analysis in Table 1, we used Chi-square test for the comparison and correlation between variables of interest versus different categorical variables.

# Results

This cross-sectional study is to determine the level of knowledge and awareness of plastic surgery among PHC provider in Qassim region, Kingdom of Saudi Arabia. In total, 82 health care providers out of 110 responded to the questionnaire (response rate 74.5%).

Table 1 displays the socio-demographic characteristics. The specialty of participants were almost similar in number as 42 (81.2%) were general physicians, while 40 (48.8%) were family physicians. The mean age of all participants was 40.6 ± 10.1. Among the participants, 42 (51.2%) were males, while 40 (48.8%) were females. The mean years of practice were 12.3 ± 08.9. The majority of the participants were North African 47 (57.3%), while 23 (28.0%) were Saudis, and 12 (14.6%) were Asian.

Table 2 shows the descriptive analysis of the participants, the knowledge toward plastic Surgeon, and the results had been presented as numbers and percentages for all categorical variables of 82 participants who were enrolled in this study.

Table 3 shows the frequency distribution on which surgeon would you expect to treat the following conditions. The results had been presented as numbers and percentages for all categorical variables of 82 participants who were voluntarily enrolled in this study. Results had been sorted in a descending order by plastic surgery. Highlighted texts were the highest number of participants' who had chosen their specific surgeon per each listed disorder.

Figure 1 shows physicians rating on plastic surgeon. From their knowledge, the list of disorders has to be performed by plastic surgeon. They are as follows: Burn deformities with 93%, liposuction with 87.7%, breast reduction/enhancement with 86.8%, skin grafting with 84.4%, surgery for facial wrinkles with 79.2%, electrical burns with 71.6%, Botox with 64.4%, cuts over the face with 63.5%, abdominoplasty with 62.9%, burns with 59.4%, congenital anomalies of ear and nose with 51.5%, deformities of leprosy with 51.4%, sex change surgery with 49.2%, non-healing wound over legs with 47.1%, cleft lip and palate with 41.7%, and totally, amputed thumb, finger, or hand with 36.1%.

**Table 1: Socio-demographic characteristics of study participants**

| Factor | Results (%) |
|---|---|
| Specialty | |
| General practitioner | 42 (51.2) |
| Family medicine specialist | 40 (48.8) |
| Age in years | 40.6±10.1 |
| ≤40 years old | 49 (59.8) |
| >40 years old | 33 (40.2) |
| Gender | |
| Male | 42 (51.2) |
| Female | 40 (48.8) |
| Years of practice | 12.3±08.9 |
| ≤10 | 40 (51.3) |
| >10 | 38 (48.7) |
| Nationality | |
| Saudi | 23 (28.0) |
| North African | 47 (57.3) |
| Asian | 12 (14.6) |
| Work location | |
| Buridah | 24 (29.3) |
| Al Rass | 24 (29.3) |
| Unizah | 20 (24.4) |
| Albadaye | 14 (17.1) |

*Results are expressed as mean±SD and *n* (%). SD: Standard deviation

## Discussion

In the last few years, we have seen the utilization of plastic surgery increasingly more often in line with the non-stop advancement of society. Individuals' well-being increasingly depends on the engaging appeal of their physical appearance, according to the different paradigms enforced by society. Annual Global Aesthetic Survey in 2016 published results that, there was 9% overall increase in surgical and non-surgical procedures as conducted by the International Society of Aesthetic Plastic Surgery.[6] In our study, 16 (58%) out of 28 listed disorders had chosen plastic surgeon. This finding is similar to the study done by de Blacam *et al.*[7] The study was about "Public Perception of Plastic Surgery," it was a cross-sectional study conducted at the University Hospital of Galway where respondents were coming from the general public attending the emergency department. In total, 899 respondents were recruited in the study. Their result shows 9 (60.0%) out of the 15 listed disorders considered a plastic surgeon most likely to perform necessary constructive surgery. Although their only listed 15 disorders, however, this study was in congruent to our study findings where plastic surgeon was the top choice to do several reconstructive surgery or plastic surgery to improve physical appearance of humans' body. Our study shows 44 (54.3%) of the participants do not know how to define "plastic surgery" correctly, which is alarming finding considering that the study population were physicians. An article published by Hammadi and El-Shereef,[8] about "Knowledge, Attitude and Practices of Plastic Surgery among Females Students at Faculty of Education," using a sample size of 220 students. Their study showed that 55 (25.0%) of the respondents can define plastic surgery correctly, this result was less than our study finding. We have to consider that the study population were medical students who are expected to have higher level of knowledge. In another

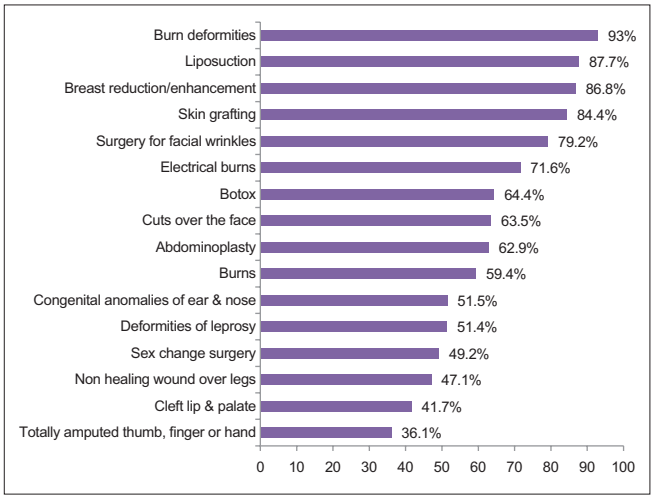


**Figure 1:** Physicians recommendation of Plastic surgeon for the listed disorder

**Table 2: Knowledge of study physicians toward plastic surgery (*n*=82)**

| Factor | Results (%) |
|---|---|
| Q1. What is the training required to be a plastic surgeon? | |
| 3 years training in GS after M.B.B.S followed by 3 years training in plastic surgery | 48 (58.5) |
| 6 years training after M.B.B.S | 11 (13.4) |
| Both of the above | 16 (19.5) |
| Do not know | 7 (08.5) |
| Q2. Do you feel plastic surgery and cosmetic surgery are the same? | |
| Yes | 4 (04.9) |
| No | 21 (25.6) |
| Cosmetic surgery is a part of plastic surgery | 53 (64.6) |
| Do not know | 4 (04.9) |
| Q3. Why do you think plastic surgery is called "Plastic" surgery? | |
| It involves use of Plastic in surgery | 7 (08.6) |
| After surgery the face looks shiny like plastic | 11 (13.6) |
| Do not know | 44 (54.3) |
| Other reason | 19 (23.5) |
| Q4. Do you think that after a plastic surgery operation, there are scar marks left over face? | |
| Yes, there are scar marks | 21 (25.6) |
| No, there are no scar marks | 54 (65.9) |
| Do not know | 7 (08.5) |
| Q5. Do you think that plastic surgery is a very expensive affair and meant for rich and famous? | |
| Yes | 38 (46.3) |
| No | 40 (48.8) |
| Do not know | 4 (04.9) |
| Q6. Do you think plastic and cosmetic surgeries are very risky? | |
| They are very risky | 7 (08.5) |
| The risk is similar to risk involved in other surgeries | 71 (86.6) |
| Does not involve any risk | 3 (03.7) |
| Do not know | 1 (01.2) |

study published by Al Doheyan *et al.*,[9] they surveyed 385 medical students at King Saud University, Riyadh, Saudi Arabia regarding "Knowledge, Attitude and Practices Concerning Cosmetic Surgery among Female Medical Students at the University Hospital." Although this study used web-based questionnaire, they found that 196 (51.4%) of the medical students had the correct knowledge on how to define plastic surgery. This study was also similar to our study findings. In addition, another study conducted by Otene *et al.*,[10] about "Knowledge, Attitude and Practice of Cosmetic Surgery among Basic Science Students of a University in Delta State, Nigeria," the study included questions about bio-data, knowledge, attitude, and practice of cosmetic surgery. Overall, 166 respondents participated in the study. Their performances in the various sections assessing their knowledge, attitude, and practice of cosmetic surgery were scored. Their result shows 82 (49.4%) medical students can properly define cosmetic surgery, which was also supplemental evidence of our study.

## Limitation

We would like to highlight some of the limitations of this project. This study does not include assessment of the practice of the PHC physicians for the patients seeking reconstructive surgery advices.

## Recommendation

We highly encouraged to reproduce this study in a bigger sample size that would give significant results and better understanding on the knowledge toward plastic surgery.

# Conclusion

In this study, the majority of the physician does not have enough knowledge about the plastic surgery. Since, the demand for plastic surgery has never been so high. PHC practitioners need more orientation in surgical disciplines.

## Acknowledgment

We wish to express our gratitude to Dr. Fawzy Sharaf from Family and Community Medicine Department at Qassim University, for providing helpful comments. The authors also would like to thank Suhaib Saleh Alkhalaf, Alhanof Fehade Alharbi, Ameerh Saleh Aljbeery, and Mohammed Saad Alqahtani for participation in data collection. Furthermore, we would like express our deep gratitude to participants, who cooperated in the current research study.

## Financial support and sponsorship

Nil.

**Table 3: Frequency distribution on which surgeon would you expect to treat the following conditions (*n*=82)**

| Disorder | General surgeon (%) | Ortho surgeon (%) | Neuro surgeon (%) | Oral and maxillofacial surgeon (%) | ENT surgeon (%) | Skin specialist (%) | Pediatric surgeon (%) | Uro-surgeon (%) | Optha surgeon (%) | Plastic surgeon** (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Breast reduction or enhancement surgery | 9 (11.8) | | 1 (01.3) | | | | | | | 66 (86.8) |
| 2. Burn deformities like crooked hands and so forth | 4 (05.6) | 1 (01.4) | | | | | | | | 66 (93.0) |
| 3. Skin grafting | 5 (06.5) | | | | | 6 (07.8) | | | 1 (01.3) | 65 (84.4) |
| 4. Liposuction (fat aspiration) | 8 (12.3) | | | | | 1 (01.4) | | | | 64 (87.7) |
| 5. Surgery for facial wrinkles | | | | 4 (05.6) | | 11 (15.3) | | | | 57 (79.2) |
| 6. Electrical burns | 15 (20.3) | | 1 (01.4) | | | 5 (06.8) | | | | 53 (71.6) |
| 7. Cuts over the face | 14 (18.9) | 5 (06.8) | 1 (01.4) | 7 (09.5) | | | | | | 47 (63.5) |
| 8. Botox | 2 (02.7) | 1 (01.4) | 1 (01.4) | | 1 (01.4) | 21 (28.8) | | | | 47 (64.4) |
| 9. Abdominoplasty | 21 (30.0) | 1 (01.4) | | | | | 3 (04.3) | | 1 (01.4) | 44 (62.9) |
| 10. Burns | 21 (30.4) | 1 (01.4) | | | 1 (01.4) | 5 (07.2) | | | | 41 (59.4) |
| 11. Deformities of leprosy | 5 (06.9) | 3 (04.2) | 10 (13.9) | | 5 (06.9) | 8 (11.1) | 2 (02.8) | 2 (02.8) | | 37 (51.4) |
| 12. Congenital anomalies of ear and nose | 2 (03.0) | | | | 25 (37.5) | 1 (01.5) | 4 (06.1) | | | 34 (51.5) |
| 13. Non healing wound over legs | 27 (38.6) | 1 (01.4) | 1 (01.4) | | | 8 (11.4) | | | | 33 (47.1) |
| 14. Sex change surgery | 8 (12.3) | | | | | | 1 (01.5) | 24 (36.9) | | 32 (49.2) |
| 15. Cleft lip and palate | 13 (18.1) | | | 6 (08.3) | 6 (08.3) | 1 (01.4) | 16 (22.2) | | | 30 (41.7) |
| 16. Hair transplantation | 7 (10.0) | | | | 1 (01.4) | 32 (45.7) | 1 (01.4) | | | 29 (41.4) |
| 17. Tendon injuries of hands | 4 (05.5) | 38 (52.1) | 5 (06.8) | | | | | | 1 (01.4) | 25 (34.2) |
| 18. Totally amputed thumb, finger or hand | 21 (34.4) | 16 (26.2) | | | | | 2 (03.3) | | | 22 (36.1) |
| 19. Vitiligo (white patches) | 1 (01.3) | | | | 4 (05.1) | 52 (66.7) | | | | 21 (26.9) |
| 20. Rhinoplasty (nose Job) | 2 (02.8) | | | 2 (02.8) | 43 (59.7) | | 5 (06.9) | 1 (01.4) | 1 (01.4) | 18 (25.0) |
| 21. Bed sore | 46 (68.7) | | | | | 9 (13.4) | | | | 12 (17.9) |
| 22. Fracture of the jaw and face | 1 (01.3) | 5 (06.7) | | 58 (77.3) | 1 (01.3) | | | | | 10 (13.3) |
| 23. Eyelid tear and injury | 1 (01.3) | | | | | | | 1 (01.3) | 68 (82.9) | 7 (09.1) |
| 24. Difficulty in opening mouth | 1 (01.4) | 2 (02.7) | 1 (01.4) | 65 (87.8) | | | | | | 5 (06.8) |
| 25. Injury to nerves of hand and legs | 2 (02.7) | 2 (02.7) | 60 (82.2) | | 4 (05.5) | | 1 (01.4) | 1 (01.4) | | 3 (04.1) |
| 26. Fractures of hand | 6 (08.3) | 62 (86.1) | 1 (01.4) | | | | | | | 3 (04.2) |
| 27. Hypospadias (congenital deformity of penis) | 9 (13.2) | | | 1 (01.5) | | | 25 (36.8) | 30 (44.1) | | 3 (04.4) |
| 28. Diabetic foot wound | 56 (87.5) | 2 (03.1) | 2 (03.1) | | | 4 (06.3) | | | | |

*Results are expressed as *n* (%), **Results had been sorted in a descending order by Plastic Surgeon. Highlighted texts were the highest number of participants' choice of surgeon per each listed disorder. Other surgeons who were not properly identified were excluded in the table. ENT: Ear, Nose, Throat

## Conflicts of interest

There are no confl icts of interest.

## References


1. Gill P, Bruscino-Raiola F, Leung M. Public perception of the field of plastic surgery. ANZ J Surg 2011;81:669-72.
2. Agarwal JP, Mendenhall SD, Hopkins PN. Medical student perceptions of plastic surgeons as hand surgery specialists. Ann Plast Surg 2014;72:89-93.
3. Antoszewski B, Kardas P, Kasielska A, Fijalkowska M. Family physicians' perception of plastic surgery and its influence on referral. A survey from Poland. Eur J Gen Pract 2012;18:22-5.
4. Panse N, Panse S, Kulkarni P, Dhongde R, Sahasrabudhe P. Awareness and perception of plastic surgery among healthcare professionals in Pune, India: Do they really know what we do? Plast Surg Int 2012;2012:962169.
5. Tanna N, Patel NJ, Azhar H, Granzow JW. Professional perceptions of plastic and reconstructive surgery: What primary care physicians think. Plast Reconstr Surg 2010;126:643-50.
6. Healio Aesthetics Journal. "Worldwide Demand for Cosmetic Surgery Continues Dramatic Increases. Available from: https://www.healio.com/aesthetics/body- aesthetics/news/online/%7Bab15e88c-9c24-4d99-afa7-9f1b1292f5f2%7D/worldwide- demand-for-cosmetic-surgery-continues-dramatic-increases. [Last published on 2017 July 14].
7. de Blacam C, Kilmartin D, Mc Dermott C, Kelly J. Public perception of plastic surgery. J Plast Reconstr Aesthet Surg 2015;68:197-204.
8. Hammadi HA, El-Shereef EA. Study of knowledge, attitude and practices of plastic surgery among females students at faculty of education, Taif University, Saudi Arabia. Am J Public Health Res 2017;5:63-9.
9. Al Doheyan T, Al Saad A, Al Haidar A, Al Fwzan H, Al Askar J, Al Malki F, *et al.* Knowledge, attitude and practices concerning cosmetic surgery among female medical students at the university hospital, King Saud University, Riyadh, Saudi Arabia. Br J Med Med Res 2016;14:1-10.
10. Otene CI, Odonmeta AB, Ebeye OA, Enivwenae AO, Ozoko LE, Ebeigbe PN. Knowledge, attitude and practice of cosmetic surgery among basic science students of a university in Delta state, Nigeria. IOSR J Dent Med Sci 2016;15:28-36.